# ON THE VALIDITY OF THE RECORD OF SILVER POMFRET *PAMPUS ARGENTEUS* (STROMATEIDAE) FROM THE ADRIATIC SEA

by

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**RÉSUMÉ**. - Validité du signalement de *Pampus argenteus* (Stromateidae) en Mer Adriatique.

Un spécimen de fiatole (Stromateidae) capturé devant Rijeka (nord de l'Adriatique) en 1896, fut initialement identifié comme *Stromateus fiatola*. En 1948, le spécimen qui est conservé dans la collection du Musée Zoologique de Zagreb, fut identifié comme *Pampus argenteus* par Šoljan, mais ce dernier doutait de son identification car *P. argenteus* est une espèce indo-pacifique, présente notamment en Asie du sud-est et en Mer de Chine orientale. De plus, Šoljan n'a donné aucune description du spécimen pour justifier son identification. Celle-ci est restée douteuse jusqu'à un examen récent du spécimen qui a permis de confirmer l'identification provisoire de Šoljan. Le spécimen est décrit, et il est suggéré qu'il a pénétré en Méditerranée en suivant des bateaux à déplacement lent, ou associé à des méduses pélagiques, des épaves flottantes ou encore des algues dérivantes. Ce signalement datant de 1896 représente le premier migrant lessepsien en Méditerranée.

Key words. - Stromateidae - *Pampus argenteus* - MED - Northern Adriatic - First record - Lessepsian migrant.

The silver pomfret, *Pampus argenteus* (Euphrasen, 1788), is an inshore species distributed in the Indo-West Pacific, from the Persian Gulf east to Indonesia and northward to Hokkaido (Japan) (Haedrich, 1984). Extralimital captures have been made from the Hawaii (Honolulu - during G. Vanderbilt South Pacific Expedition) in June 1937 (Fowler, 1938), and from the North Sea (18 miles east of Seahouses, Northumberland) (Davis and Wheeler, 1985). On 16 July 1896 one fish species, was collected near Rijeka (northern Adriatic), and donated to Zoological Museum in Zagreb by Mr. M. Barač. Langhoffer (1905) identified this species as a juvenile stage of *Stromateus fiatola* (registration or inventory number - 481). Šoljan (1948) reported that this species, after his review of the Museum Collection, was not *Stromateus fiatola*. Finally, Šoljan (1975) pointed his opinion and identified this species as *Pampus argenteus* (again without any precise measurements - meristic and morphometric data and detail descriptions). Since the status of the Adriatic record is still unclear, the aim of this paper is to validate the record of the silver pomfret *P. argenteus* from the Adriatic Sea.

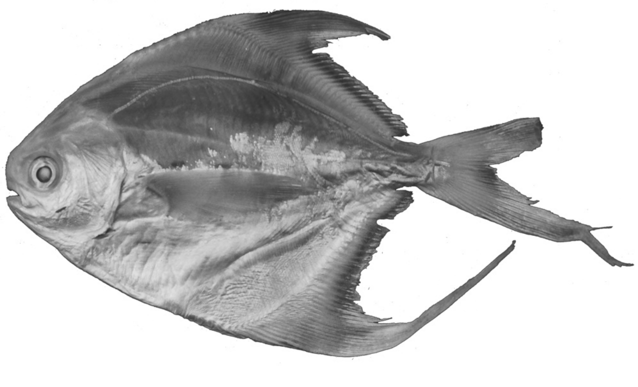

Figure 1. - The specimen of *Pampus argenteus* (Inv. Num. 481. - Zoological Museum - Zagreb) caught off Rijeka (Northern Adriatic) on 16 July 1896.

## *PAMPUS ARGENTEUS*

(Fig. 1)

### Material

1 specimen, 15.4 cm TL, deposited in the Zoological Museum in Zagreb (inventory number: 481); locality: near town Rijeka (northern Adriatic); 16 July 1896, donated by M. Barač.

### Description

Body very deep, and compressed. Operculum absent; gill opening reduced to a vertical slit on the side of the body; gill membrane broadly united to isthmus. Dorsal fin single and falcate, as also anal fin. Dorsal and anal fins preceded by a series of blade-like spines with anterior and posterior points. Pelvic fins absent. Caudal fin deeply forked, the lower lobe longer than the upper. Total length TL = 15.4 cm; standard length SL = 9.9 cm; maximum height H = 73.0 mm; minimum height h = 10.8 mm; length dorsal fin base D = 51.5 mm; length anal fin base A = 2.3 mm; pectoral fin length P = 41.9 mm; caudal fin length C = 18.1 mm; orbital length O = 8.7 mm; preorbital length PreO = 10.2 mm; postorbital length PostO = 15.3mm. Dorsal fin: $8^{*}$+40. Anal fin: $6^{*}$+36. (*blade-like spines). Pectoral fins: 24. Weight of preserved specimen W = 43.6 g.

## DISCUSSION

Presented data on morphometry and meristic characters in this study are in agreement with those presented by Haedrich (1984), and according to this we are in possibility to confirm the record of silver pomfret *P. argenteus* near Rijeka (northern Adriatic). Haedrich

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(1967) gave his comments about the first Šoljan's dilemma and considers that it is so far out the established range of the genus that one record can only be based on specimens brought from elsewhere. Same author (1973, 1979, 1984) gave his comments about the Šoljan's identification of species as *Pampus argenteus* and he pointed that it is extremely unlikely that this species from Indian Ocean could move through Suez Canal to appear in a single specimen in the Adriatic (allegedly caught near Rijeka). Šoljan was so dissapointed and he did not fall in any scientific discussion with Haedrich practically confessing that he probably wrongly determined the species and his theory about following a boat through the Suez Canal fell down even though he was supported by Tortonese (1970, 1975). Jardas (1983, 1985, 1996) did not put this species in the list of the Adriatic fishes and he wrote that this record must be neglected and species erased from the list of the Adriatic fishes eventhough he never checked, as Haedrich had not, the specimen in Zoological Museum in Zagreb. According to our confirmation of the identity of specimen and positive validation of the record near Rijeka we suggest here that species *P. argenteus* must be in the list of Adriatic fishes. We have no doubt from correspondence and dialogue with the custodians of Zoological Museum in Zagreb and review of Mr. Barač's donation documents that this species was captured alive so we dispel the suggestions that someone brought the specimen from elsewhere or that either an elaborate hoax had been perpetrated or that the fisherman merely picked up a dead specimen discarded from a passing vessel.

There have been two other reports of silver pomfret found far from its centre of distribution; two specimens from Honolulu (Hawaii) (Fowler, 1938) and a specimen from the North Sea (Davis and Wheeler, 1985) which had been deposited in the collection of the Natural History Museum in London (BNNH 1983.12.14.1). There have been no further records from either locality, and Haedrich (1967) considers (for records in Adriatic and Hawaii) that they are so far out of established range of the genus that the records can only be based on specimens brought from elsewhere. Fowler was of the same opinion regarding his specimen. Davis and Wheeler (1985) negates the possibility that the fish could have reached the North Sea via the Cape of South Africa, but gave an opinion that the only obvious route was via the Red Sea and the Suez Canal into the Mediterranean. They also pointed that among the three anomalous records the occurrence in North Sea is the most difficult to comprehend in terms of distance travelled and physical and environmenral barriers crossed. Davis and Wheeler (1985) and Orsi-Rellini (2001), in general, accepted Šoljan's hypothesis (specimen having reached the Adriatic from the Red Sea by following a boat through the Suez Canal) and record but we must point out here that they also did not check the fish from the Zoological Museum in Zagreb, so they were not in possibility to confirm the species identification. Stromateoid fishes are associated with pelagic medusae when young, and with floating wreckage, drifting seaweed or slow-moving vessels, and considering the volume of marine traffic from the Arabian Gulf to Adriatic, the possibility of ship-following (or something previously mentioned) should be accepted. There is other evidence from the Adriatic, regarding similar behaviour, for example, medusophagus fishes, such as *Schedophilus ovalis* (recently discovered for the very first time in the Adriatic) and *Schedophilus medusophagus* (very rare species in the Adriatic) entering the Adriatic (in juvenile stage) during the invasion of medusae *Pelagia noctiluca* (Onofri, 1986). We must note here that both species occur in the Mediterranean. Similar was observed also for stromateoid fish *Stromateus fiatola* found it under drifting seaweed in the eastern central Adriatic (Dulčić *et al*., 2000). There are some other evidences, regarding northern extensions and unusual presence of some warm water species and lessepsian migrants (already found in the eastern Mediterranean) in the Adriatic: *Ruvettus pretiosus*, *Plectorhinchus mediterraneus* (first record in the Adriatic), *Hemiramphus far* (Lessepsian migrant - first record in the Adriatic Sea), *Parexocoetus mento* (Lessepsian migrant - first record in the Adriatic Sea), *Sphoeroides pachygaster* (first record in the Adriatic Sea) (see in Dulčić *et al*., 1999; Dulčić and Grbec, 2000) and *Epinephelus coioides* (Lessepsian migrant-first record in the Adriatic) (Parenti and Bressi, 2001). A young specimen of this last species was caught in 1998 near Trieste (North Adriatic Sea) and a likely cause of such record (second record for the Mediterranean) is ballast transport (Parenti and Bressi, 2001), but in the case of *P. argenteus* our opinion is that it was not possible since ballast was organised in a different way from nowadays. The possibility of introduction of early life history stages of silver pomfret by biofouling is also very low since it is very hard to believe that young stages (eggs and larvae) could survive such a long trip. These facts also support hypothesis of following slow-moving vessel or habit of associating with pelagic medusae when young (juvenile stage), with floating wreckage and drifting seaweed.

This confirmation of the record and acceptance of our hypothesis arises another question: "Is this a very first record of any lessepsian migrant in the Mediterranean Sea?", since the first reliable record of a Lessepsian fish found in the Mediterranean (*Atherinomorus lacunosus* Forster in Bloch and Schneider, 1801 - near Alexandria, Egypt) is from 1902 (Golani *et al*., 2002). According to our confirmation of the identity of specimen, positive validation of the record near Rijeka, we propose here to accept this record as the first reliable record (in 1896) of any Lessepsian migrant in the Mediterranean Sea.

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